MARKLAND AVENUE QUARRY (OU4)
BASIS OF DESIGN

CONTINENTAL STEEL SUPERFUND SITE
Kokomo, Indiana

Markland Avenue Quarry Pond
Sediment Removal
Remedial Design

WA No. 222-RDRD-05BW/Contract No. 68-W6-0025

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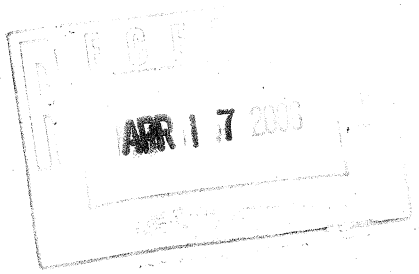

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Abbreviations and Acronyms

ARAR	applicable or relevant and appropriate requirements
ASTM	American Society for Testing and Materials
BOD	Basis of Design
CAA	Clean Air Act
CAMU	Corrective Action Management Unit
CCI	CH2M HILL Constructors, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CLP	contract laboratory program
CQAP	Construction Quality Assurance Plan
CSSS	Continental Steel Superfund Site
CWA	Clean Water Act
DNAPL	dense non-aqueous phase liquid
FML	flexible membrane liner
GAC	granular activated carbon
gpm	gallon(s) per minute
HDPE	high-density polyethylene
HMTA	Hazardous Materials Transportation Act
HSWA	Hazardous and Solid Waste Act Amendments of 1984
IAC	Indiana Administrative Code
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
LDR	Land Disposal Restriction
mg/kg	milligram(s) per kilogram
mg/L	milligram(s) per liter
NCP	National Contingency Plan
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	perchloroethene
PID	photoionization detector

Introduction

CH2M HILL prepared this Basis of Design (BOD) Report for the Continental Steel Superfund Site (CSSS) Markland Avenue Quarry (OU4) pond sediment removal for the United States Environmental Protection Agency (USEPA) under Contract No. 68-W6-0025 in accordance with the Statement of Work (SOW) in the Record of Decision[1] (ROD) issued in September 1998 and the Remedial Design/Remedial Action (RD/RA) Handbook issued in June 1995.[2] This BOD Report is divided into the following sections:

- Introduction
- Project Delivery Strategy
- Design Approach, Assumptions, and Parameters
- Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)
- Construction Schedule
- Cost Estimate
- Biddability, Constructibility, and Operability Review
- Tables
- Figures
- Appendixes

The following appendixes included with this BOD Report provide supplemental information integral to the design of the selected remedy:

- Appendix A: Markland Avenue Quarry Data Evaluation Documentation—Technical memorandums discussing data evaluation, predesign investigation activities, and raw data.
- Appendix B: Geotube Information—Technology information pertaining to geotubes.
- Appendix C: M-CACES Cost Estimate—A cost estimate within an accuracy of +15 to -5 percent in M-CACES format.

Appendixes A and B are quite voluminous and have not changed since the December 2003 version of the Markland (OU4) Quarry Basis of Design; therefore, they are not being reissued with this document.

The design specifications, drawings, and other supporting documents that accompany this report have been included as separate submittals. The separate design specification and drawing submittal includes all of the drawings cited in this report.

Site History

The Remedial Investigation/Feasibility Study (RI/FS) and ROD contain a detailed description of the history of Continental Steel. Throughout its history, the plant produced

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[1] USEPA/IDEM. *Record of Decision: Continental Steel Corporation Superfund Site.* Kokomo, Howard County, Indiana. September 1998.

[2] USEPA. *Remedial Design/Remedial Action Handbook (EPA 540/R-95/059).* June 1995.

the quarry served as a drum reclamation area where drums were dumped directly onto the ground and disposed of in the quarry pond. Sediment in the pond contains high concentrations of volatile organic compounds (VOCs) and dense nonaqueous phase liquid (DNAPL). The sediments, 1 to 3 feet thick, are located below 50 feet of water. The surface water exhibits pH levels up to 12. The quarry is in a residential area, is a nuisance attracting trespassers, and has no current ecological significance.

Selected Remedy—Markland Avenue Quarry (OU4)

Record of Decision

The purpose of USEPA's ROD[3] was to select the final RA for the CSSS. The final remedy will control the sources of contamination and prevent the further migration of contaminants. The selected remedy for the Markland Avenue Quarry consists of the following:

- Cover contaminated quarry fill solids with common soil
- Excavate contaminated sediment from the quarry pond
- Dispose of quarry sediment in the Lagoon Area Corrective Action Management Unit (CAMU)
- Backfill the quarry pond with alternative fill material
- Collect and contain shallow groundwater and dispose of it offsite at the wastewater treatment plant (WWTP)
- Implement deed restrictions

Description of the Record of Decision-Selected Remedial Action

According to the ROD, the RA will include deed and groundwater use restrictions to restrict site access and the use of contaminated groundwater; however, groundwater will be addressed under a separate RD. The RA will also include removing the contaminated sediment from the quarry pond, backfilling it with clean fill, and installing a common soil cover to eliminate potential exposure to and direct contact with contaminated solids. Backfilling and cover activities are addressed under a separate RD. This RD addresses the removal, handling, and subsequent disposal of the quarry pond sediments.

The 1.28 million yd^3 of existing fill material previously placed within the quarry area when Continental Steel was in operation will remain in place. This material will be enclosed by a two-part cover system consisting of a warning layer barrier and 2 feet of permeable common soil. The cover system will provide a warning mechanism in the event of future excavation and eliminate direct contact with the contaminated media. The protective cover will be graded and grassed to facilitate drainage, minimize erosion, and provide for recreational use.

The sediment in the pond will be dredged and dewatered, solidified/stabilized as necessary, and disposed of in the CAMU. If treatment for VOCs is necessary prior to placing

[3] USEPA/IDEM. *Record of Decision: Continental Steel Corporation Superfund Site.* Kokomo, Howard County, Indiana. September 1998.

- Qualitative sediment dewatering testing
- Sub-bottom profiling geophysical investigation

The data evaluation document (Appendix A) includes the procedures used (Attachment A-1 to Appendix A) and the data collected (Attachment A-2 to Appendix A) and was completed as part of the preliminary design investigation for the quarry. Key conclusions of the preliminary investigation activities are listed below:

- The depth of sediment across the entire floor area of the quarry pond ranges from about 1.1 to 3.2 feet, with an average of approximately 2 feet.
- Assuming the average area of the lake bottom to be about 195,500 feet^2, the total volume of the sediments to be removed is estimated at about 14,500 yd^3.
- The sediment readily dewaters when placed in the geotubes.
- No significant difference in dewatering time was observed between the coarse and fine geotube material mesh sizes.
- Contaminant concentrations in the gravity-drained water collected from the fine-mesh geotube material were lower than that from the coarse mesh geotube material.
- The presence of DNAPL in the sediment was observed; however, not in the concentrations described in the RI.

2003 Proposed Remedial Action

Based on the results of the predesign investigation as well as further investigation into sediment management since the Technical Assistance document was submitted, implementation of the Markland Avenue Quarry (OU4) pond sediment removal RA is expected to include the following components:

- Site preparation, including construction of one lined geotube dewatering area and one debris drying area.
- Location, removal, and disposal of miscellaneous debris on the bottom of the Markland Avenue Quarry Pond.
- Removal and placement of sediment located on the bottom of the Markland Avenue Quarry Pond into geotubes.
- Installation and operation of a 100 gpm dewatering system. Water pumped out of the pond or the geotube-lined area shall meet the pretreatment requirements established by the Kokomo WWTP prior to discharge to the sanitary sewer.
- Placement of a temporary cover over the lined geotube dewatering area.
- Institutional controls.
- Environmental monitoring and maintenance.
- Five-year site reviews.

Project Delivery Strategy

This section presents the project delivery strategy for the Markland Avenue Quarry (OU4) pond sediment removal RA. The contracting strategy and primary components of the RA are summarized below. Key project delivery strategies, relative to a specific RA component, are noted below in their respective sections.

Contracting Strategy

The contract documents for the Markland Avenue Quarry (OU4) pond sediment removal are being prepared based on the understanding that the State of Indiana (State) is the Owner. CH2M HILL will prepare the specifications and drawings for the State to use as part of their solicitation documents. The State will provide the bidding process instructions and contract terms.

Final Design

Detailed design drawings and specifications are provided for the RA components. The final design package consists of the following:

- BOD Report, which incorporates the Value Engineering Results, and includes a Cost Estimate, and the Biddability, Operability, and Constructibility Reviews
- Specifications and Drawings

Detailed design drawings and specifications have been prepared for the RA components. However, most construction methods and selection of some materials will be based on performance specifications. Performance specifications will allow the contractor(s) flexibility in methods of implementation, while ensuring conformance with the specification requirements.

Remedial Action—Markland Avenue Quarry (OU4)

Descriptions of the primary components of the RA are presented below in their expected construction sequence. The design details and construction methods for each of these components are presented in the following section.

The Markland Avenue Quarry (OU4) pond sediment removal RA will be executed by the State using the RD prepared by CH2M HILL. The primary components of the RA, as discussed in the preceding sections, are presented below in their expected construction sequence. Key project delivery strategies, relative to a specific RD component, are noted below in their respective section.

- **Preconstruction Sediment Treatability Testing**—Treatability testing using a geotextile tube hanging bag test will evaluate whether geotextile tubes will dewater a wide range of sediments within a reasonable time. Testing will be performed to evaluate whether conditioned sediment dewaters more quickly and effectively than sediments direct from the dredge.

Design Approach, Assumptions, and Parameters

This section presents the technical details of the Markland Avenue Quarry (OU4) pond sediment removal RA. This section also describes the construction methods for each RA component as well as performance standards that must be met during construction. As described previously, the components of the Markland Avenue Quarry (OU4) pond sediment removal RA consist of the following, presented in the expected project delivery sequence:

- Preconstruction sediment treatability testing
- Site preparation
- Debris removal
- Sediment removal
- Institutional controls
- Environmental monitoring and maintenance
- Five-year site reviews

Preconstruction Sediment Treatability Testing

Description of Treatability Testing

Bench testing will be performed on sediment samples to assess sediment dewatering and dewatered solids characteristics and the requirements for carriage water treatment. The basic approach to bench testing is to collect representative bulk samples and perform bench-scale testing for the following sediment properties and dewatering processes:

- Sediment and solids characterization
- Sand separation
- Jar and settling tests for sediment thickening
- Geotextile tube dewatering
- Carriage water treatment

Details Including Design and Construction Technical Factors

Samples collected using manual sediment coring methods will be combined into a single composite sample. The composite sample will be diluted with water from the quarry pond to simulate the dredge slurry of a hydraulic dredge. The simulated dredge slurry is expected to be approximately 8 percent solids by weight. Depending on the type of sediment pumped by the hydraulic dredge, the solids concentration in the dredge slurry can vary significantly. However, the assumed 8 percent solids by weight represent a possible average based upon a reasonable range of normal operating values of between 5 to 12 percent.

Multiple core samples will be composited and water from the quarry pond will be added to simulate a dredge slurry of approximately 8 percent solids by weight. All the testing can be performed on the same sample to avoid problems with changed influent conditions. Typically, sediment dewatering characteristics in geotextile tubes are first tested in a bench-

site, and implementing erosion control measures. Erosion control measures shall meet Indiana Department of Natural Resources (IDNR) requirements.

This task also includes construction of a debris drying area and installation of the dredge and support equipment in the quarry pond, including the installation of an 8-inch high-density polyethylene (HDPE) dredge slurry pipe from the quarry pond to the dewatering pad located in the Lagoon Area (OU2). This pipe will transport the dredged sediment slurry and water from the dewatering system to the dewatering pad and water treatment system located in the Lagoon Area (OU2).

Areas Requiring Site Preparation

Clearing and grubbing will be limited to the contractor staging area, debris drying pad, and area of the dredge slurry pipe. Figure 3 shows the proposed location of the pipe. The rest of the site will remain undisturbed during this portion of the RA.

Construction Details Including Design and Construction Technical Factors

In preparation for construction activities, the placement of all required erosion control measures (e.g., straw bales, silt fencing, etc.) will be completed before the soil is disturbed. Once erosion control measures are in place, remaining site preparation activities will commence.

A Notice of Intent (NOI) form for construction site activities will be sent to IDEM prior to the start of construction activities. A site management plan (SMP) will be developed to address construction erosion and sediment control practices. The plan will include instructions for evaluating the effectiveness of implemented erosion control measures and for implementing contingency measures, if required, to address observed erosion effects.

Standard erosion control measures, such as silt fencing, will be located surrounding the perimeter of the quarry pond. As construction erosion control practices are implemented, they will be visually evaluated for effectiveness and adjusted as necessary to limit potential erosion at the site.

Debris Drying Area

Debris removed from the bottom of the quarry pond shall be placed in a lined holding basin. The size and height of the drying area shall be sized by the contractor, since the amount of debris requiring removal is unknown. The portable holding basin will be placed on a 6-inch thick sand base after the existing ground surface has been graded flat.

The holding basin system will consist of a berm constructed on the existing ground surface. A high-strength flexible waterproof membrane will be used to line the inside of the holding basin. Water collected in the basin will be pumped with the dredged sediment slurry to the dewatering pad located in the Lagoon Area (OU2). Water from the dewatering pad will be treated prior to discharge to Wildcat Creek.

Gradient Control System

A pump installed in the quarry pond will extract water at a rate of approximately 100 gpm to create an inward gradient into the quarry pond from the surrounding aquifer. Groundwater modeling conducted as part of the groundwater data evaluation task showed that

tubes until they are removed and disposed of at an approved offsite disposal facility. Field testing of the bag material during the predesign investigation indicated that the sediment could be dewatered with minimal volatile emissions.

Sediment and Debris Requiring Removal

All easily accessible debris will be removed.

A sub-bottom profile was generated as part of the predesign investigation activities (Attachment A-1a to Appendix A). The profile results indicate that sediment across the entire floor area of the quarry pond is an average of 24 inches deep and has a total volume of about 14,500 yd^3. Ideally, all sediment will be removed; however, due to equipment limitations, the dredging industry general standard is that sediment can be removed to within 6 inches without extraordinary effort.

Removal Details, Including Design and Construction Technical Factors

Debris

Debris will be located, marked, and removed from the quarry pond through the use of commercial divers and a crane. Prior to sediment removal work, divers will locate and mark debris using the side-scan sonar survey results. Once all the debris has been located and marked, divers will attach and secure the debris for removal by a crane. Debris lifted to the surface will be placed in a lined drying area(s) and allowed to dry. Metal tanks or drums will be washed and salvaged, if possible. Other debris will be allowed to dry before being disposed of at an approved offsite disposal facility.

Sediment

Prior to starting sediment removal, a multibeam sonar survey will be performed that can measure the sediment surface to within 0.2 feet. This survey will be used as a baseline to calculate the volume of in-place sediment. Additional multi-beam sonar surveys will be performed at least monthly to measure the amount of sediment remaining in the pond.

The subcontractor will be required to propose a method to remove the pond sediment in a Dredging Plan to be submitted to the State. One possible method involves the use of a hydraulic dredge selected by the dredging contractor based on the existing site conditions. Hydraulic dredges capable of dredging at 50 feet deep and pumping at 3,000 gpm are available. It is anticipated that the dredge would be equipped with a cutter head to chop up small debris and break up sediment. This type of hydraulic dredge does generate some turbidity; however, the pond is contained and the introduction of turbidity into another water body is not a concern.

Another method for removing sediment is through the use of a vortex pump suspended from a barge. The pump is equipped with countercurrent rotating impellers to break up the sediment. A computer-aided navigation system moves the barge and adjusts the height of the pump based on the depth of the sediment to be removed.

Maintaining an inward hydraulic gradient, as described earlier, will minimize any adverse environmental effects caused by suction dredge equipment (such as increased turbidity).

settling area for larger, faster settling particles. Water from the sump will be pumped to the water treatment system.

The FML (Figure 6) consists of two geomembrane liners placed between an upper and lower geotextile fabric. The geotextile fabric provides cushioning from the gravel bed and prevents the FML from being punctured.

Description of Water Treatment System

Water from the carriage water sump will be pumped to a water treatment system (Figure 7) prior to being discharged to Wildcat Creek. The water will be subjected to subcontractor determined filtration prior to granular activated carbon (GAC) vessels. The GAC vessels may require backwashing if they become fouled with biological or other type of material. A portion of the effluent from the GAC vessels will be stored as a non-potable water source for plant use and backwash cycles.

Performance Standards

The performance standard for the quarry pond sediment RA is 75 percent removal of the sediment in two dredging passes, measured to an accuracy of 0.2 feet, while minimizing the impact to groundwater when the sediment is disturbed. Minimal potential impact on groundwater from stirring up sediment is expected, given the creation of an inward gradient created by pumping continuously from the quarry pond. Hydraulic monitoring of wells surrounding the quarry will be specified using pressure transducers and data loggers to verify that an inward gradient is present.

Synthetic Precipitation Leaching Procedure samples were collected as part of the predesign investigation activities. Analysis of the data (Appendix A) indicates that elevated lead and trichloroethene (TCE) levels in the sediment may leach concentrations that exceed groundwater criteria. Water treatment system for the carriage water from the dewatering pad will lower contaminant concentrations below the required discharge limits, which have not yet been established, prior to discharging to Wildcat Creek. The performance standards for the carriage water may consist of discharge limits for the following:

- Total suspended solids (TSS)
- VOCs
- Metals

Site-specific limits for constituents of concern (COCs) will be negotiated with IDEM.

Closure Verification

Verification of sediment removal will be based on a final multi-beam sonar survey, with the capability of measuring the sediment surface to within 0.2 feet.

Sediment Disposal

Dewatered sediment shall be solidified/stabilized, if necessary, prior to transporting the material offsite for disposal at an approved offsite disposal facility. After dewatering, sediment samples from the geotubes will be collected and analyzed for PCBs, VOCs, polyaromatic hydrocarbons (PAHs), and metals. A USEPA-supplied mobile laboratory

Compliance with Applicable or Relevant and Appropriate Requirements

The CSSS ROD summarized the following federal and state ARARs in Appendix G:

- CERCLA, including the Superfund Amendments and Reauthorization Act of 1986 (SARA) and all subsequent amendments
- Resource Conservation and Recovery Act of 1976 (RCRA), including the Hazardous and Solid Waste Act Amendments of 1984 (HSWA)
- The Toxic Substances Control Act (TSCA)
- The Clean Water Act (CWA) and all subsequent amendments
- The Safe Drinking Water Act (SDWA)
- The Clean Air Act (CAA)
- The Protection of Wetlands/Floodplains Management Executive Order
- The Hazardous Materials Transportation Act (HMTA)
- Indiana Water Quality Standards (Indiana Administrative Code [IAC] Title 327)
- Indiana Solid Waste Management Board Rules (IAC Title 329)
- Indiana Air Pollution Control Regulations (IAC Title 326)

Many of these laws and regulations were discussed within the *Lagoon (OU2) Revised Design Criteria Report* (January 2002) and the *Main Plant Design Criteria Report* (July 2002). Laws and regulations with unique aspects related to the design of the quarry sediment excavation are discussed below. Table 1 presents the specific requirements, the design components that address each requirement, and a discussion regarding the necessity of an ARAR waiver.

This section has been revised to reflect the shift from disposal in the onsite CAMU to an approved offsite facility.

The Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA requires the selected remedy to meet the substantive requirements of all environmental rules and regulations that are ARARs unless a specific waiver of the requirement is granted. Waiver of ARARs may be requested (per National Contingency Plan [NCP] 300.430[f][1][ii][C]) based on any one of six circumstances. It is not anticipated that any ARAR waiver under CERCLA will be necessary.

with listed hazardous waste. However, USEPA recognized that remediation wastes presented different issues. As a result, USEPA published alternative LDR treatment standards for contaminated soil (sediment is included in the definition of soil) in 40 Code of Federal Regulations (CFR) 268.49. The LDR requirement asserts that treatment must achieve the greater of 90 percent reduction in total constituent concentrations or 10 times the Universal Treatment Standard (UTS) for that constituent. The UTSs are identified in 40 CFR 268.48 (Table UTS). For example, the UTS for TCE is 6 milligrams per kilogram (mg/kg). Treatment of soil containing 500 mg/kg TCE would be required only to achieve 60 mg/kg (10 × UTS) rather than 50 mg/kg.

Toxic Substances Control Act

TSCA regulates the remediation of soils contaminated with PCBs under 40 CFR 761.61 (a), Self-Implementing Onsite Cleanup and Disposal of PCB Remediation Waste. However, this section specifically excludes remediation of sediment from the self-implementing rules. As a result, the TSCA self-implementing rules are not ARARs for the quarry sediment remediation. Contaminated sediments are addressed under 40 CFR 761.61(b) (3), Performance-based Cleanup. This section specifically requires sediments dredged or excavated from waters of the United States to be managed in accordance with a permit issued under Section 404 of the CWA or the equivalent of such a permit. While a permit is not required for CERCLA response actions, consultations with the United States Army Corps of Engineers (USACE), the permitting agency, will be held to determine the requirements that would apply to the quarry sediment dredging and excavation.

TSCA also requires soil contaminated with PCBs at concentrations of 50 mg/kg or greater to be disposed at either a hazardous waste landfill permitted under RCRA or at a chemical waste landfill permitted under TSCA.

TSCA storage requirements (40 CFR 761.65) for PCB materials containing PCB concentrations of 50 mg/kg or greater prior to disposal are considered ARARs and are discussed in Table 1.

Clean Air Act

CAA requirements are potentially applicable to RAs that result in air emissions, such as excavation activities. Mitigative measures to reduce air emissions during excavation will be adhered to as part of the construction plan.

Clean Water Act

The CWA provides regulations for discharges of pollutants into the waters of the United States. It required USEPA to set water quality standards for all contaminants in surface waters and required that permits be obtained for discharge of pollutants from a point source into navigable waters.

Regulations promulgated under CWA authority require a permit to be obtained for dredging or excavation of sediments in navigable water such as the quarry pond. While CERCLA

In general, most of these requirements mirror the above-cited federal requirements. The main requirements identical to the cited federal requirements are as follows:

- RCRA Subpart S CAMUs – 329 IAC 3.1-9-1
- RCRA LDRs – 329 IAC 3.1-12-1
- TSCA PCB Remediation Wastes – 329 IAC 4

Occupational Safety and Health Administration Requirements

A health and safety plan for construction activities will be required in accordance with the OSHA requirements listed in 20 CFR 1910 and 20 CFR 1926.

Minimizing Environmental and Public Impacts

Environmental and public health and welfare impacts will be minimized through the following:

- Site access control
- Soil erosion control
- Air pollution control

Site Access Control

Access control to the quarry during remediation is necessary to prevent exposure of trespassers to contaminated sediment and soil during excavation. Access will be controlled by the current fencing and that to be installed surrounding work areas.

Access to the CAMU will be controlled by the current fencing and the gate will be unlocked but kept in the closed position during working hours. A sign will be posted at the entrance indicating that visitors are required to sign in at the office trailer. Personnel in the office trailer area adjacent to the gate will monitor the gate area. The gate will be locked after work hours.

Soil Erosion Control

Silt fencing and/or hay bales will be placed along the banks of the quarry pond following sediment removal until the area has been regraded and revegetated. Construction of embankments may also be necessary to control erosion during remediation.

Air Pollution Control

Dredging the quarry may produce volatile emissions. Impacts on workers will be minimized through implementation of an employee health and safety plan specifying a photoionization detector (PID). If VOC action levels are exceeded, appropriate action will be implemented, as described in the employee health and safety plan.

Minimal volatilization is expected during the dredging. The amount of volatile material appears to be less than expected and the use of geotubes should help to minimize emissions.

Construction Schedule

A draft construction schedule follows this page.

Cost Estimate

The estimated cost for this RA, based on the final design, is approximately $4.3 million, within an accuracy of plus 15 to minus 5 percent. The estimated cost in the M-CACES Gold format is attached (Appendix C).

This cost estimate was prepared based on vendor and supplier quotes obtained during the fourth quarter of 2005. Given the length of time that this design may remain inactive prior to implementation (1 to 2 years), revisiting this estimate prior to the initiation of construction is warranted.

The cost estimates shown, along with any resulting conclusions on project financial or economic feasibility or funding requirements, have been prepared for guidance in project evaluation and implementation from the information available at the time the cost estimate was prepared. The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation schedule, and other variable factors. As a result, the final project costs will vary from the cost estimates presented herein. Because of these factors, project feasibility and funding needs must be carefully reviewed before making specific financial decisions or establishing project budgets to help ensure project evaluation and adequate funding.

Biddability, Constructibility, and Operability Review

CH2M HILL's affiliate, CH2M HILL Constructors, Inc. (CCI), has reviewed the draft BOD and draft plans and specifications with an emphasis on biddability and constructibility. Comments from the CCI review, as well as those of the project review team, have been incorporated into this document and the accompanying plans and specifications.

Table

Figures